

REMARKS

Claims 1, 2, and 4-31 are pending.

Rejections under 35 U.S.C. § 103

In the Advisory Action, mailed May 18, 2009, the Examiner indicates that the previous Amendment and Declaration filed May 4, 2009, fail to place the application in condition for allowance because the Armato et al. patent is not antedated by the 37 CFT 1.131 Declaration. More specifically, the Examiner states that “the description of forming a fabric in the present application does not have support in the parent application and Exhibits A and B”. Regarding Exhibit B, the Examiner further states, “the six cord construct containing six parallel cords in the fourth paragraph on the first page of Exhibit B is not a fabric when the term fabric is given its art recognized meaning.” Applicants respectfully disagree and point out that Exhibit A and B disclose a fabric as the term is used in the instant claims, defined by the specification. However, in an effort to expedite prosecution, Applicants provide the following arguments over the cited disclosures.

On page 3 of the Final Office Action, the Examiner rejects claims 1, 2, and 4-31 under 35 U.S.C. § 103 “as being unpatentable over Armato et al (7,285,637), and if necessary in view of Li et al (6,303,136) and Takewaza et al (5,736,399).” Applicants respectfully traverse this rejection.

Applicants traverse the rejection of claims 1, 2, and 4-31 as obvious over Armato et al. The Examiner relies on Armato et al. as teaching:

“producing non-woven silk fibroin fabrics for use as a cell culture scaffold by degumming silk fibroin to remove sericin, treating with formic acid to break disulfide bonds, and removing the formic acid by evaporation to obtain the fabric (Example 1, col 4, lines 34-50). The breaking of disulfide bonds results in chain fragments which can serve as specific cellular recognition sites **promoting attachment and growth of cells** (col 4, lines 21-25)...” The Examiner alleges that it would have been obvious to omit breaking disulfide bonds as disclosed by Armato et al., if the result of breaking the bonds is not desired”.

In response to the Examiner's allegation that it would have been obvious to omit breaking disulfide bonds as disclosed by Armato et al., if the result of breaking the bonds is not desired, Applicants respectfully submit that, as recited by the Examiner, Armato et al. teaches the disulfide bonds are broken to promote attachment and growth of cells. Applicants claims specifically recite "wherein said yarn promotes ingrowth of cells around said fibroin fibers". As such, the ordinary skilled artisan would not have been motivated to omit breaking of the disulfide bonds as disclosed by Armato to produce the instant invention.

The Examiner cites Armato as disclosing "that textile methods would theoretically be possible to weave using merely degummed silk fibroin fibers in order to obtain a flexible fabric (col 2, lines 20-22)." Applicants respectfully submit that this statement would not motivate the ordinary skilled artisan to omit breaking of the disulfide bonds to produce the instant invention given the teachings of Armato since degumming is only referred to in the context of it being necessary to increase the solubility of the raw silk filament in formic acid (column 1, lines 59-62). Furthermore, Applicants respectfully submit that the Examiner overstates the merits of Armato with respect to the teaching that textile methods are possible to weave using merely degummed silk fibroin fibers, since the statement in Armato et al. is made in the Background section of the Armato disclosure, and is unsupported by any teachings therein or any citations of art. In light of this, Applicants respectfully request withdrawal of this rejection.

Applicants respectfully traverse the rejection of claims 1, 2, and 4-31 as obvious over Armato et al. in light of Li et al. On page 4, paragraph 1, of the Final Office Action, the Examiner cites Li as further suggesting that breaking bonds as disclosed by Armato et al. can be omitted if the function of breaking bonds is not desired. The Examiner cites Li as teaching "attaching cells to a filamentous matrix that can be made from various materials including silk (col 2, line 49 and col 4, line 18). In response, Applicants respectfully submit that Li teaches the use of **non-degradable** silk suture matrix (column 2, line 42-46, and column 4, lines 5-7). The fibers/filamentous matrix disclosed by Li et al. are unsuitable for use in the instant invention, which specifies that said fibers are "biocompatible" (claim 1). Due to this failure, the teachings of Li with respect to "attaching cells to a filamentous matrix" would not reasonably be applied to the teachings of Armato by the ordinary skilled artisan to produce the instant invention. As such,

the ordinary skilled artisan would not be motivated by the disclosure of Li et al. to omit breaking of disulfide bonds as taught by Armato et al. Furthermore, there is no reasonable expectation of success that the instant invention could be achieved by omission of breaking of the bonds as taught by Armato. In light of this, Applicants respectfully request withdrawal of this rejection.

Applicants respectfully traverse the rejection of claims 1, 2, and 4-31 as obvious over Armato et al. in light of Takezawa et al. On page 4, paragraph 1, of the Final Office Action, the Examiner cites Takezawa as further suggesting that breaking bonds as disclosed by Armato et al. can be omitted if the function of breaking bonds is not desired. However, Takezawa fails to teach adherence of cells to the disclosed silk without the further manipulation of the culture medium or carrier itself to promote cell adherence (e.g., see Takazawa, column 4, lines 53-65). Due to this failure, the teachings of Takezawa, with respect to cellular adherence to silk fibroin, would not be reasonably applied to the teachings of Armato by the ordinary skilled artisan, to produce the instant invention. As such, the ordinary skilled artisan would not be motivated by the disclosure of Takezawa to omit breaking of disulfide bonds as taught by Armato et al. Furthermore, there is no reasonable expectation of success that the instant invention could be achieved by omission of breaking of the bonds as taught by Armato. In light of this, Applicants respectfully request withdrawal of this rejection.

In light of the above statements, Applicants respectfully request reconsideration of the claims and withdrawal of the pending rejections.

Double Patenting

On page 5 of the Final Office Action, the Examiner provisionally rejects claims 1, 2, and 4-31 "on the ground of obviousness-type double patenting" over "claims 1-19 of U.S. Patent No. 6,902,932 B2 in view of Armato et al." Applicants traverse this rejection based on the failure of Armato et al. to teach or suggest the claimed invention. Nevertheless, in an effort to expedite prosecution, a terminal disclaimer is filed concurrently herewith. Applicants submit that the terminal disclaimer obviates this rejection.

CONCLUSION

For at least the reasons set forth above, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance of the claims are earnestly requested. The Commissioner is hereby authorized to charge any payment deficiency to Deposit Account No. 50-0850. Any overpayments should also be deposited to said account. Should the Examiner have any questions that would facilitate further prosecution or allowance of this application, the Examiner is invited to contact the Applicants' representative designated below.

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Respectfully submitted,

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